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22st December, 1959.

COCOM Document 3715.01/2B

COORDINATING COMMITTEE

RECORD OF DISCUSSION

ON

ITEM 1501 - COMMUNICATIONS, NAVIGATION, DIRECTION FINDING

AND RADAR EQUIPMENT

1st and 2nd December, 1959

Present: Belgium(Luxembourg), Canada, France, Germany, Italy, Japan, Netherlands, United Kingdom, United States.

References: COCOM Docs. Nos. 3700.1, 2 and 5, 3715.00/1, 3715.01/1 and W.P. 1501/1 - 4.

1. The CHAIRMAN opened the second round of discussion on Item 1501 by inviting the Committee to refer to the German Delegation's proposal (COCOM Doc. No. 3715.01/1, page 6), and to undertake further detailed study on the basis of this text. The Chairman explained that the Committee should give views on the two aspects of this proposal: 1) the question of principle involved in changing the present Notes into exclusion clauses and 2) the technical questions arising out of the various sub-items.
2. The GERMAN and UNITED KINGDOM Delegates noted that there were some changes to be made in sub-items (a)(4), (b)(2), (b)(5), (d)(5) and (e) (see paragraphs 26, 31, 44, 53 and 56 below).
3. The UNITED STATES Delegate, referring to the question of principle mentioned by the Chairman, i.e. the changing of the Notes into exclusion clauses, stated that the views of his Delegation, as set out on the first page of COCOM Doc. No. 3715.01/1, had undergone no change since the first round of discussion.
4. The NETHERLANDS Delegate stated that, since the close of the first round of discussion, his authorities had given careful study to the problems arising in the case of Item 1501, and that, without wishing to raise a formal objection, his Delegation believed that it would not be reasonable to free the equipment concerned without fixing any limit whatsoever, and that some steps should be taken to ensure a quantitative control over exports of the equipment covered by Item 1501. Such a control might be achieved by the adoption of an administrative exceptions system allowing Governments to authorise certain exports provided they were made in reasonable quantities and reported to the Coordinating Committee. The Delegate stated that he was not submitting a specific proposal, but that he was ready to do so if it would enable the Committee to reach agreement.
5. The GERMAN Delegate noted that it was not possible to reach agreement on the changing of the Notes into exclusion clauses, and therefore suggested that the substance of the exclusion clauses proposed by his Delegation in COCOM Doc. No. 3715.01/1 should be embodied in Notes allowing administrative exceptions.
6. The majority of Delegations favoured this suggestion, and the GERMAN Delegate submitted wording for Notes to sub-items (a), (b)(2) and (e) (see paragraphs 8, 30 and 57 below).
7. The CHAIRMAN then invited the Committee to study the definition set out in COCOM Doc. No. 3715.01/1 sub-item by sub-item, assuming that exceptions would be dealt with in Notes along the lines suggested by the German Delegate. The Committee then proceeded to study Item 1501 sub-item by sub-item.

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Sub-item (a)

8. The GERMAN Delegate proposed the wording for a Note set out below. This wording took into account the difficulties previously encountered as regards the words "types and series" used in his original proposal recorded in COCOM Doc. No. 3715.01/1, and explained what was meant by "reasonable quantities" in specifying that the equipment concerned must be "needed to equip Sino-Soviet Bloc civilian aircraft...." :

"Governments may permit as administrative exceptions the shipment of reasonable quantities of commercial airborne equipment needed to equip Sino-Soviet Bloc civilian aircraft, provided the equipment is equivalent in all characteristics and performance to equipment used for at least two years as standard equipment of aircraft not covered by Item 1460 and containing none of the following characteristics :.....

These shipments should be reported in the monthly statistics."

9. The FRENCH, ITALIAN and NETHERLANDS Delegates agreed in principle to the Note proposed by the German Delegation.

10. The UNITED STATES Delegate undertook to recommend this Note to his authorities for sympathetic consideration. He believed, however, that certain terms needed further clarification and cited by way of example the problems of interpretation to which the words "Sino-Soviet Bloc civilian aircraft" might give rise. He also feared that the idea of the two-year period might cause difficulty. In conclusion, the Delegate suggested, on a personal basis, that it might be possible within six months for example to review the situation in the light of the experience gained by Member Governments.

11. The GERMAN Delegate stated that he would not in principle be opposed to any measures taken to confirm the procedure proposed, at the time of each International List Review.

Sub-item (a)(1) (text set out in COCOM Doc. No. 3715.01/1)

12. The COMMITTEE agreed to this text.

Sub-item (a)(2) (text set out in COCOM Doc. No. 3715.01/1)

13. The COMMITTEE agreed to this text.

Sub-item (a)(3) (text set out in COCOM Doc. No. 3715.01/1)

14. The UNITED STATES Delegate was ready to agree to the cut-off of 360 channels if the latter were within the 118 - 136 Mc/s frequency band.

15. This question was referred to a Technical Working Group, together with the present sub-item (a)(4), and the Working Group suggested that the following exclusion be added to the text of sub-item (a)(4) : "...except for equipment of not more than 360 channels within the frequency bandwidth of 118 to 136 Mc/s."

16. The FRENCH Delegate made a reservation as to the advisability of excluding frequency standards even in the 118 to 136 Mc/s band. With these devices it was possible to generate from 300 to 2,000 frequencies with a spacing of 50 Kc/s using only a limited number of quartz crystals (10 for instance). Civilian aircraft servicing commercial airlines had planned flight schedules and did not need a very large number of selectable channels, whereas military aircraft required a much wider margin of manoeuvrability and had to have a large number of channels, whence the not only strategic but tactical interest of frequency standards. From the logistic point of view moreover, the Delegate stressed that classic equipment required a great number of quartz while frequency standards were self-contained. As to the question of technology, the Delegate believed that if the Bloc countries possessed the technological know-

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how embodied in this equipment, they would not try to obtain any of it, and if, on the other hand, they did not have the necessary technical knowledge, the latter should be protected. These were the reasons which had led the French Delegation to believe that great caution should be exercised in this respect, and to advocate that sub-item (a)(4) of the present definition be left unchanged.

17. The UNITED STATES Delegate recalled that his Delegation had agreed ad referendum to some relaxation in this field, and stated that the comments just made by the French Delegation deserved careful study. He wished there and then to make the three following remarks; first, the fact that the crystal-saving technique was present in a given set of equipment did not mean that the use of this technique in other equipment would not create problems. Those which did arise were linked with the characteristics of each individual set of equipment. Secondly, difficulties had been encountered in the United States, even for some civilian aircraft, in developing adequate crystal-saving equipment. Thirdly, there was a very big difference between a spacing of 100 Kc/s and one of 50 Kc/s. Lastly the Delegate reserved the right to come back to the French Delegation's comments once experts from his own Delegation had had an opportunity of studying them with the care they deserved.

18. The UNITED KINGDOM Delegate, in reply to the French Delegation's comments, explained that there was no question of freeing the equipment concerned completely, but only of allowing the export of "reasonable quantities needed to equip Sino-Soviet Bloc civilian aircraft" - no logistic assistance would thus be gained. As to the question of technological know-how, the Delegate recalled that the Russians had civilian aircraft using 500 channels thanks to the crystal-saving technique, and that aircraft servicing long-distance British commercial airlines were fitted with sets using 360 channels.

19. Upon a question from the German Delegate, the FRENCH Delegate explained that while the 100 Kc/s spacing involved a well-known technique the 50 Kc/s spacing implied a relatively recent technique, which should be protected. If sets supplying 360 channels in the 118 to 136 Mc/s band were freed, it was tantamount to freeing equipment which provided a 50 Kc/s spacing.

20. The GERMAN Delegate then recalled that his Delegation's proposal to fix the number of channels at 360 had been a compromise between the 50 channels advocated by the United States Delegation and the 1,000 channels suggested by the United Kingdom Delegation. He explained that this figure had been reached by means of a calculation based on the 100 Kc/s spacing and on the frequency band in Region I. If the band were to be limited to 118 - 136 Mc/s, the Delegate wondered if it would not be possible to decrease the number of channels accordingly, giving a figure of 180 channels.

21. The NETHERLANDS Delegate recalled that his Delegation had already expressed doubts as to the advisability of raising the present cut-offs. It should not, however, be forgotten that these cut-offs would come within the framework of restrictive administrative Notes, and it was within this framework that the French Delegation's comments, to which the Netherlands Delegation more-over subscribed, should be considered. The Netherlands Delegation fully recognised the value of the 50 Kc/s spacing but, in their view, it was for this reason that Notes setting up quantitative limits and a 2-year time-limit had been drafted. In conclusion, the Delegate stated that his Delegation were able to accept the figure of 360 channels in the 118 to 136 mc/s band accompanied by an administrative Note.

22. After a fresh exchange of views, the COMMITTEE noted that, in view of the position taken up by the French Delegation, agreement was not at present possible on the redefinition proposed for sub-item (a)(3) and agreed to resume study of it on the 14th December.

Present sub-item (a)(4):

23. The CHAIRMAN recalled that the United Kingdom proposal to delete this sub-item had not met with unanimous approval during the first round of discussion.

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24. The GERMAN Delegate then suggested that the present sub-item (a)(4) be maintained, and that equipment operating in the 118-136 Mc/s frequency band be excluded (this proposal met the suggestion made by the Technical Working Group for sub-item (a)(3) and set out in paragraph 15 above).

25. The discussion here was closely linked with that which had taken place on sub-item (a)(3), and is recorded in paragraphs 15 to 22 above).

Sub-item (a)(4) (text set out in CCCOM Doc. No. 3715.01/1)

26. The COMMITTEE agreed to change this sub-item as follows:

"pressurised throughout"

Sub-item (a)(5) (text set out in CCCOM Doc. No. 3715.01/1)

27. The FRENCH Delegation, while seeing no need to change the temperature range since it was the one internationally agreed, were willing, in a spirit of compromise, to join the majority and agree to the wording suggested for this sub-item.

28. The COMMITTEE therefore agreed to adopt the following text:

"Rated for continuous operation over a range of ambient temperatures extending from below -40°C. to above +55°C."

Sub-item (b)(1)

29. The COMMITTEE agreed to retain this part unchanged.

Sub-item (b)(2)

30. The GERMAN Delegate proposed a Note reading as follows:

"Governments may permit as administrative exceptions the shipment of reasonable quantities of:

.....

provided the equipment is equivalent in all characteristics and performance to equipment used for at least two years as standard equipment of aircraft not covered by Item 1460.

These shipments should be reported in the monthly statistics."

Sub-item (b)(2)(iii) Proposed by the United Kingdom Delegation.

31. The UNITED KINGDOM Delegate stated that his Delegation would like to add a third exclusion clause covering D.M.E. equipment. He pointed out that this equipment was free under the present Note to sub-item (b)(2), while the proposal before the Committee, which was framed as an administrative exceptions Note, would release old models and keep modern types under embargo. The Delegate moreover stressed that his Delegation had originally proposed the release of Tacan equipment also, and had limited their proposal to D.M.E. equipment in a spirit of compromise.

32. The UNITED STATES Delegate believed that D.M.E. equipment was used principally for military purposes in Western countries and most certainly in Sino-Soviet Bloc countries. The United States Delegation thus saw no valid reason to relax the controls.

33. The UNITED KINGDOM Delegate once more explained that D.M.E. equipment was at present, under certain conditions, freed under the terms of the existing Note, and a lengthy discussion ensued as to the interpretation of that Note. It became apparent that the FRENCH, NETHERLANDS and UNITED STATES Delegations did not consider D.M.E. equipment to fall under the present Note, while the GERMAN and UNITED KINGDOM Delegations believed that, subject to the conditions laid down in that Note, such equipment could be exported to the Sino-Soviet Bloc. The COMMITTEE noted that in any event the wording of the present Note was

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not clear and might even be taken to mean that not only D.M.E. but also Tacan equipment could be exported under the conditions defined therein. The German Delegate stressed that in this case the Note he had proposed, together with the new part (iii) suggested by the United Kingdom Delegation, would be more restrictive than the existing Note as interpreted by some countries.

34. The UNITED STATES Delegate protested against such a legalistic interpretation of the present text, urging that the decision to free or to embargo this equipment should be based only on the agreed criteria.

35. The GERMAN Delegate remarked that only recently the majority of delegations had taken account of the exact wording of an item despite the fact that such a legalistic interpretation was not in their favour.

36. The CHAIRMAN invited delegations to give views as to whether, leaving aside the question of the wording of the present Note, D.M.E. equipment should be kept under embargo or freed.

37. The FRENCH, NETHERLANDS and UNITED STATES Delegations, in the belief that this equipment was used principally on military aircraft, felt that it should be retained under embargo.

38. The UNITED KINGDOM Delegate on the contrary believed that such equipment was used by civilian aircraft and embodied no technological know-how, and that there was ample justification for its release.

39. Since, however, the choice seemed to be either reverting to the existing text which might free D.M.E., Decca and Tacan equipment, or accepting the United Kingdom proposal which would assure embargo of at least Tacan, the BELGIAN, FRENCH, ITALIAN, JAPANESE and NETHERLANDS Delegations were ready to agree to the United Kingdom proposal if it secured unanimous agreement in the Committee. The UNITED STATES Delegate was unable to agree to this proposal.

40. The CHAIRMAN noted that the Committee was unable to reach agreement on this proposal.

Sub-item (b)(2)(iv) Proposed by the United Kingdom Delegation.

41. The UNITED KINGDOM Delegate stated that his Delegation would like to add a fourth exclusion clause covering I.L.S./V.H.F. equipment. The UNITED STATES Delegate asked if transistorised types with military applications would be excluded from control under the United Kingdom proposal, and the UNITED KINGDOM Delegate explained that if military types were involved they would come under the Munitions List. The United States Delegation wished to study the matter further.

42. The FRENCH Delegate, having obtained the assurance that the equipment concerned embodied no recent techniques, agreed to the United Kingdom proposal.

43. The COMMITTEE agreed to resume study of the matter on the 14th December.

Sub-item (b)(3) (text set out in CCCOM Doc No. 3715.01/1)

44. The COMMITTEE agreed to retain this part unchanged.

Sub-item (b)(4) (text set out in CCCOM Doc. No. 3715.01/1)

45. The COMMITTEE agreed to retain this part unchanged.

Sub-item (b)(5) (text set out in CCCOM Doc. No. 3715.01/1)

46. The COMMITTEE agreed to amend this text as follows:

"pressurised throughout"

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47. As for sub-item (a)(5), the FRENCH Delegation were willing, in a spirit of compromise, to join the majority of the Committee in accepting the wording for this part.

48. The COMMITTEE therefore agreed to adopt the following text:

"Rated for continuous operation over a range of ambient temperatures extending from below -40°C. to above +55°C."

Sub-item (c) (text set out in COCOM Doc. No. 3715.01/1)

49. The COMMITTEE agreed to retain this part unchanged.

Sub-item (d) - Heading (text set out in COCOM Doc. No. 3715.01/1)

50. The COMMITTEE agreed to the heading for this sub-item, reading as follows:

"Ground and marine radar and direction finding equipment, as follows:"

Sub-item (d)(1) (text set out in COCOM Doc. No. 3715.01/1)

51. The COMMITTEE agreed to the text proposed for this part, as follows:

"Radar equipment, n.e.s., other than those normal equipments designed for pulse operation at frequencies between 1,300 Mc/s and 1,660 Mc/s, 2,700 Mc/s and 3,900 Mc/s, or 8,500 Mc/s and 10,000 Mc/s, having in the case of marine radar, a peak output power to the aerial system not greater than 75 KW or, in the case of ground-based radar, having a peak output power to the aerial system not greater than 50 KW and a range not greater than 50 nautical miles.

NOTE: The 50 nautical miles range is intended to refer to the maximum useable range on a target of 100 sq.m."

Sub-item (d)(2) (text set out in COCOM Doc. No. 3715.01/1)

52. The COMMITTEE agreed to the text proposed for this part, as follows:

"Radar equipment incorporating permanent Echo Cancellation."

Sub-item (d)(3) (text set out in COCOM Doc. No. 3715.01/1)

53. The COMMITTEE agreed to the text proposed for this part, as follows:

"Radar equipment utilising antennae systems for other than linear polarisation."

Sub-item (d)(4) (text set out in COCOM Doc. No. 3715.01/1)

54. The COMMITTEE agreed to the text proposed for this part, as follows:

"Radar equipment utilising other than conventional pulse modulation and signal processing techniques."

Sub-item (d)(5) (text set out in COCOM Doc. No. 3715.01/1)

55. The UNITED KINGDOM Delegate proposed the following change in the text suggested:

"Ground direction finding equipment other than loop systems or systems employing a number of spaced vertical aerials."

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The United Kingdom Delegation believed it desirable to release certain systems giving results comparable to those obtained by Adcock systems.

56. The UNITED STATES Delegate was able to agree to the text set out in COCOM Doc. No. 3715.01/1, but had to refer the new United Kingdom proposal to his Government.

57. The FRENCH Delegate found that the United Kingdom text was too vague and ran the risk of freeing equipment still under development or Tacan apparatus.

58. After a meeting of a Working Group, the FRENCH Delegation suggested that the following wording be added to the text set out in COCOM Doc. No. 3715.01/1:

"or any equivalent systems aiming solely at lessening the quadrantal error."

59. The COMMITTEE noted that agreement had been reached in principle by the Working Group on this definition, and agreed to hear final views from Governments on the 14th December.

Sub-item (e) (text set out in COCOM Doc. No. 3715.01/1)

60. The CHAIRMAN noted that the position as regards sub-item (e) was identical with that shown for sub-item (b)(2).

61. The GERMAN Delegation proposed a Note reading as follows:

"Governments may permit as administrative exceptions the shipment of reasonable quantities of:

.....

needed to equip Sino-Soviet Bloc civilian airports or commercial airlines provided the equipment is equivalent in all characteristics and performance to equipment used for at least two years in connection with equipment mentioned in the Note to part (b)(2) above.

These shipments should be reported in the monthly statistics."

62. Delegations undertook to submit this text to their Governments, and the COMMITTEE agreed to hear final views of Governments on this proposal, and on all other outstanding questions as to Item 1501, on the 14th December.

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